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(54) MOS transistor and fabrication process therefor

(57) An MOS transistor comprises a semiconductor substrate having a field region; a gate electrode (19) formed on the semiconductor substrate (1) through the intermediary of a gate insulating film; and source/drain regions (31) formed in the semiconductor substrate; wherein the field region including at least a lower insulating film (3,2) and an upper insulating film (4) made of a material permitting the upper insulating film to be selectively etched with respect to the lower insulating film; the gate electrode being configured such that the gate length of a top surface thereof is greater than the gate

length of a bottom surface thereof facing a channel region positioned between the source/drain regions; the gate electrode having a sidewall spacer (16) formed of a sidewall insulating layer made of the lower insulating film (3,2) and a material (16a,15) permitting the sidewall insulating layer to be selectively etched with respect to the upper insulating film, the sidewall spacer contacting a side wall of the gate electrode for covering an outer periphery of the channel region; and the channel region being substantially leveled with the source/drain regions.

Fig. 1(a)

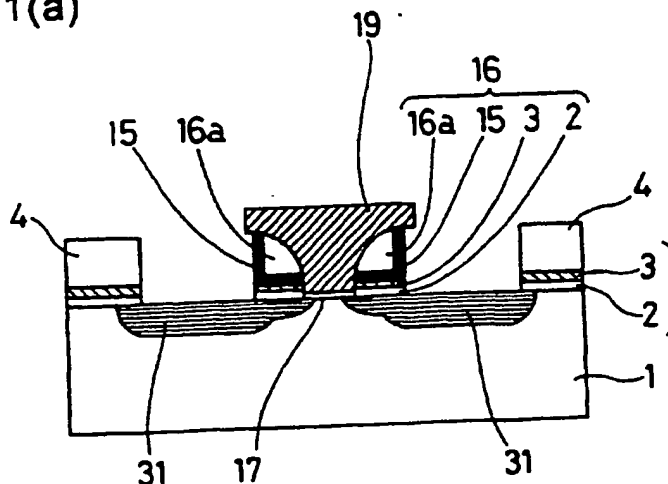
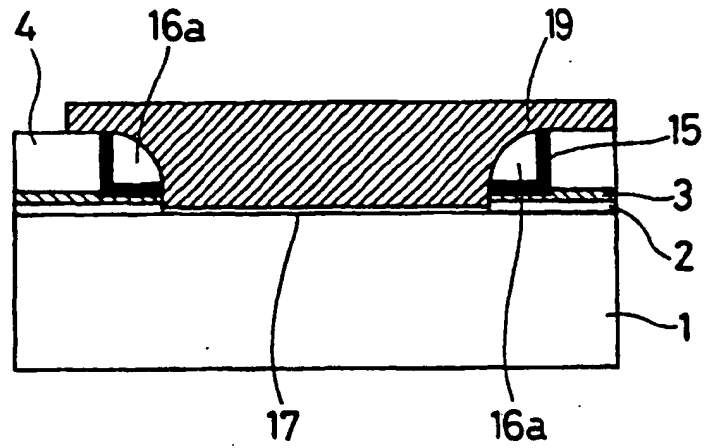


Fig. 1(b)





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Application Number
EP 96 30 5957

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	HIRONORI TSUKAMOTO ET AL: "SUB 0.1 M NMOSFET UTILIZING NARROW TRENCH GATE AND SELECTIVE EXCIMER LASER ANNEALING (SELA)" INTERNATIONAL CONFERENCE ON SOLID STATE DEVICES AND MATERIALS, 29 August 1993, pages 26-28, XP000409365 * the whole document *	1-3,5	H01L29/78 H01L21/336 H01L29/423 H01L21/265 H01L27/092 H01L21/8238 H01L21/762
Y	PATENT ABSTRACTS OF JAPAN vol. 012, no. 246 (E-632), 12 July 1988 -& JP 63 036564 A (NEC CORP), 17 February 1988 * abstract; figure 2 *	1-3,5	
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A	US 5 270 234 A (HSU, LOUIS L ET AL) 14 December 1993 * figures 1-10 *	1,2,6	H01L
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 December 1998	Examiner Gélébart, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			



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A	US 4 942 448 A (TSUKAMOTO KATSUHIRO ET AL) 17 July 1990 * figure 12 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
Place of search THE HAGUE		Date of completion of the search 7 December 1998	Examiner Gélébart, J
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